



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/459,831	12/13/1999	MICHAEL S. SHAFFER	SHAFFER-4-3-	1673

27975 7590 01/12/2004

ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A.  
1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE  
P.O. BOX 3791  
ORLANDO, FL 32802-3791

EXAMINER

HYUN, SOON D

ART UNIT PAPER NUMBER

2663

DATE MAILED: 01/12/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/459,831

Applicant(s)

SHAFFER ET AL.

Examiner

Soon-Dong Hyun

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 14-46 and 48-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-12, 18-28, 42-46 and 48-63 is/are allowed.
- 6) ☒ Claim(s) 1-7, 14-17 and 29-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2663

## **DETAILED ACTION**

### ***Response to Amendment***

1. The indicated allowability of claims 1-7, 14-17, and 29-41 is withdrawn in view of the already cited references to Rich (U.S. Patent No. 5,784,370) and Akata et al (U.S. Patent No. 5,594,724), Rejections based on the cited reference(s) follow.

### ***Claim Objections***

2. Claim 36 is objected to because of the following informalities.

In line 4, "an" before "LLD" should be -- the -- or -- said --.

In line 6, "a" before "PLD" should be -- the -- or -- said --.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 6, 14, 16, 29-38, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Rich (U.S. Patent No. 5784370).

Regarding claims 1 and 29-31, Rich discloses a communication system comprising:

Art Unit: 2663

a physical layer device (PLD) (1304 in FIG. 13b) comprising a PLD send interface (1316+1320) including PLD parallel information outputs (for 1382) and at least one PLD control output (for 1384, 1386);

a logical link device (LLD) (1302 in FIG. 13a) comprising an LLD receive interface (1306 +1310) including LLD parallel information inputs (for 1358) and at least one LLD control input (for 1362);

first parallel communication channels (1382 + 1358) connecting the PLD information outputs to respective LLD information inputs (D<sub>0</sub>-D<sub>7</sub>), and at least one second communication channel (1364 +1386) connecting the at least one PLD control output to the at least one LLD control input so that control signals are sent from the PLD to the LLD out-of-band form information signals;

wherein the first parallel communication channels are provided over at least one electrical conductor. See col. 20, line 36-col. 22, line 35.

Regarding claim 2, refer to the discussion for the claim 1. Rich discloses the communication system further comprising:

the LLD receive interface including at least one LLD status output (for 1372);

the PLD send interface including at least one PLD status input (for 1392);

at least one third communication channel (1372 +1392) connecting the at least one LLD status output to the at least one PLD status input.

Regarding claims 3 and 38, refer to the discussion for the claim 1. Rich further discloses the communication system comprising:

Art Unit: 2663

the PLD comprising a PLD receive interface (1316 +1320) including PLD parallel information inputs (for 1394) and at least one control input (for 1390);

the LLD comprising an LLD send interface (1306 + 1310) including LLD parallel information outputs (for 1368) and at least one control output (for 1370);

third communication channels (1368) connecting the LLD information outputs to respective PLD information inputs, and at least one fourth communication channel (1370 +1390) connecting the at least one LLD control output with the at least one PLD control input so that the PLD and LLD are operable a push-push configuration, i.e., the claimed push-push configuration reads on the one way arrow of 1328 and 1330.

Regarding claim 5, Rich further discloses that the PLD receive interface including at least one PLD status output (for 1386), the LLD send interface including at least one LLD status input (for 1362) and at least one fifth communication channel connecting the at least one PLD status output to the at least One LLD status input (1386 +1362).

Regarding claims 6 and 40, refer to the discussion for the claim 1. Rich further discloses that the LLD comprises ATM device (ATM layer).

Regarding claims 14, 32, and 33, Rich discloses a communications system comprising:  
a physical layer device (PLD) (1304) comprising a PLD send interface (1316 +1320) including PLD parallel information outputs (for 1382), at least one PLD control output (for 1386), and at least one PLD status input (for 1392), a PLD receive interface (1316 +1320) including PLD parallel information inputs (for 1394), at least one PLD control input (for 1390), and at least one PLD status output (1386);

Art Unit: 2663

a logical link layer device (LLD) (1302) comprising an LLD receive interface (1306 + 1310) including LLD parallel information inputs (for 1358), at least one LLD control input (for 1364), at least one LLD status output (for 1372), an LLD send interface (1306 + 1310) including LLD parallel information outputs (for 1368), at least one LLD control output (for 1370), and at least one LLD status input for (for 1362);

first parallel communications channels (1382 +1358) connecting the PLD information outputs to respective LLD information inputs (D<sub>0</sub>-D<sub>7</sub>);

at least one second communications channel (1380 + 1364) connecting the at least one PLD control output to the at least one LLD control input;

at least one third communications channel (1372 +1392) connected the at least one LLD status output to the at least one PLD status input;

fourth parallel communications channels (1368 +1394) connecting the LLD information outputs to respective PLD information inputs;

at least one fifth communications channel (1370 +1390) connecting the at least one LLD control output to the at least one PLD control input; and

at least one sixth communications channel connecting (1386 +1362) the at least one PLD status output to the at least one LLD status input. See col. 20, line 36-col. 22, line 35.

Regarding claim 16, Rich further discloses that the LLD comprises ATM device (ATM layer).

Regarding claim 34, Rich discloses a method for communicating between a physical layer device (PLD) (1304) and a logical link device (LLD) (1302), the method comprising:

Art Unit: 2663

sending information signals over first parallel communication channels (1408, 1322) from the PLD to the LLD;

sending control signals over at least one second communications channel (1422, 1334) from the PLD to the LLD so that control signals are sent from the PLD to the LLD out-of-band from information signals;

sending information signals over third parallel communications channels (1344, 1432) from the LLD to the PLD; and

while sending control signals over at least one fourth communication channel (1420, 1340) from the PLD to the LLD so that control signals are sent from the PLD to the LLD out-of-band from information signals. See col. 20, line 36-col. 22, line 35.

Regarding claim 35, Rich discloses the method further comprising:

operating an LLD send interface (1310) including LLD parallel information outputs (for 1368); and

operating a PLD receive interface (1320) including PLD parallel information inputs (for 1394).

Regarding claim 36, Rich discloses the method further comprising:

operating the LLD send interface (1310) including at least one LLD control output (for 1372); and

operating the PLD receive interface (1320) including at least one PLD control input (1392).

Regarding claim 37, Rich discloses a method for communicating between a physical layer device (PLD) (1304) and a logical link device (LLD) (1302), the method comprising:

sending information signals over first parallel communication channels (1408, 1322)  
from the PLD to the LLD;

sending control signals over at least one second communications channel (1422, 1334)  
from the PLD to the LLD so that control signals are sent from the PLD to the LLD out-of-band  
from information signals; and

sending status signals over at least one third communications channel (1420, 1338) from  
the PLD to the LLD.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 15, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich  
(U.S. Patent No. 5,784,370) in view of AAP (Applicant's Admitted Prior Art).

Rich does not teach that the send interfaces and the receive interfaces are not mirrored to  
define symmetrical interfaces. The specification (page 23) describes that "symmetrical interfaces  
may simplify design and manufacturing and offer other advantages including loop-back  
capabilities as indicated by the dotted loopback path 263 as illustrated between the PLD send  
interface 203 and the PLD receiver interface 230 will be appreciated by those skilled in the art",  
i.e., the interfaces being mirrored as cited in the claims are well known in the art to simplify  
design and manufacturing and offer other advantages including loop-back capabilities.



Art Unit: 2663

Therefore, it would have been obvious to one having ordinary skill in the art to incorporate mirrored interfaces into Rich.

7. Claims 7, 17, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich in view of Akata et al (U.S. Patent No. 5,594,724)

Rich discloses all the features except for a PLD comprising one of a SONET and a SDH device. In another patent concerning ATM technology, Akata teaches that a SDH (Fig. 1, detail 110) generating section can interface with an ATM system (Fig. 1, "ATM IN") in order to reduce the hardware amount by causing a plurality of paths to share a circuit for generating or terminating a TC layer (Col. 6, lines 19-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to extend the invention of rich to include a PLD comprising a SDH device when motivated to reduce the hardware amount.

#### *Allowable Subject Matter*

8. Claims 8-12, 18-28, 42-46, and 48-63 are allowed.

#### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon-Dong Hyun whose telephone number is (703) 305-4550. The examiner can normally be reached on Monday-Friday from 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen, can be reached on (703) 308-5340.

Art Unit: 2663

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

10. Any response to this action should be mailed to:

Commissioner for Patents

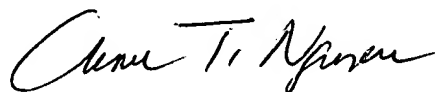
P.O. Box 1450

Alexandria, VA 22313-1450

Or faxed to: 703-872-9306 for formal communications intended for entry with a label of "OFFICIAL" and for informal or draft communications with a label of "PROPOSED" or "DRAFT" (attn: Art Unit 2663, Soon-Dong Hyun).

  
S. Hyun

01/07/2004



CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600